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ABSTRACT

To determine formal principles of discourse processing and production, a study reviewed theories in various disciplines related to language and/or thought and thereby rationalized an approach of quantitative matrix analysis to the problems caused by discrepant discourse structures encountered in second language learning. Statistical analyses of newspaper editorials from the People's Republic of China and Taiwan revealed that language (English versus Chinese) and political stance (communist versus capitalist) respectively influenced discourse structures. Structures affected were length of clauses, relationship of propositions within paragraphs (subordinate, coordinate, superordinate), relation of subtopics to main topics, and amount of detail in subtopics, among others. These results indicated that language learning should be examined at the discourse level and in context, and that teachers and researchers should be aware of these discrepant discourse structures that can be envisaged in the matrix analysis. (Nine statistical tables and four figures are included, and a sample of the matrix analysis of a text is appended.)
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TITLE: Argumentative Discourse Structure in Chinese and English Writing: A Comparative Analysis

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This paper is a condensed version of an MA thesis under the same title completed in Mar., 1986, in Faculty of Educ. Simon Fraser University, Burnaby, B.C. Canada.

Part of the statistical results of this study were presented at the 1986 (May) conference of the International Federation of Teachers of English.

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Argumentative Discourse Structure in Chinese and English Writing: A Comparative Analysis

Abstract. This study reviews theories in various disciplines related to language and/or thought in order to determine formal principles in discourse processing and production, thereby retionalizes an approach of a quantative matrix analysis to the problems caused by discrepant discourse structures encountered in second language learning. The results of statistical analyses show that language and political stance respectively influences discourse structures. These results indicate that language learning should be examined at the discourse level and in context, and that teachers and researchers should be aware of these discrepant discourse structures which can be envisaged in the matrix analysis.

This study, like many others, aims to be "theoretical only that it may become practical" (Richards, 1936, p. 19): in cross-cultural reading and writing, problems caused by the differences in "patterns of thoughtflow in a discourse" (Rodgers, 1970)--which constitute the semantic structure of that discourse--have brought us back to theories--e.g., linguistics, rhetoric--in order to find practical solutions to the problems.

This study has aims on two levels (specific and general) which endorse each other. The specific aim is to find out whether two sets of newspaper editorials on domestic economy, written in Chinese and English respectively, exhibit significant differences in idea arrangement. Underlying the empirical analysis of these editorials is a more general issue: whether sociocultural background has any significant effect on the arrangement of written argumentative discourse. And if so, in what ways?

In order to extract idea arrangement from discourse, a

matrix analysis developed by Coe et al (1987) is employed. The matrix can be used to systemize a "grammar of passages" (Shaughnessy, 1978) capable of delineating the possible ways to structure and convey information effectively, and to identify culturally typical discourse patterns in Chinese and English.

The results of this investigation may suggest practical improvement in second language reading and writing pedagogy to enhance the reading and writing skills of Chinese English as a Second Language (ESL) learners.

Literature Review

Language Transfer

In second language learning, contrastive analysis and error analysis are the two most widely applied theories that examine the sources of learner errors in second language production. The two theories prove, in various aspects, that the native language is a major source of learner errors. Prevalent for decades, the two theories are flawed in several aspects. A combination of the two may resolve the problems.

In theory basis, contrastive analysis takes a behavioristic view of language learning (Schatcher & Celce-Murcia, 1977), which is equated with acquiring a set of new "language habits". Error analysis, emphasizing learner initiation, may provide a fuller view of language learning. In the analysis, contrastive analysis provides a systematic examination of language learning in general and the grammars of the languages at issue, yet contrastive analysis tends to turn out a repertoire of predicted errors that

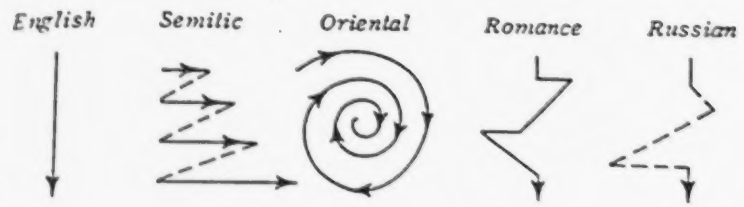
may never be made. Error analysis accounts for actual learner performances thus desirable avoids those nonexistent errors but undesirably misses the similarities between the languages at issue. In the scope of error sources, contrastive analysis includes only one (the native language), while error analysis broadens the scope by adding two more sources: the target language and the process of language learning.

Other than these differences, contrastive analysis and error analysis do have something in common: First, they both regard the native language as a major source of learner errors for a good reason: a "theory of learning" (Jacobovits, 1969) and many second language teachers' experiences (Sridhar, 1981) both support the allegation of language transfer. Second, they both deal with structures under the sentence level.

Based on the same hypothesis of language transfer, Kaplan (1967) pioneered "contrastive rhetoric": in writing, second language learners transfer culturally typical rhetorical patterns from their native languages to the target language, thereby somethimes hinder clear communication (Kaplan, 1967). The graphic representations of the culturally typical rhetorical structures Kaplan hypothesizes are as follows:

Figure 1

Culturally Typical Rhetorical Patterns



(p. 15)

Kaplan (1968) further segments, without any specified guidelines, a few pieces of writing by Chinese ESL learners, imposes his perception on the structure of these writings, then concludes that those students applied in their writing, an archaic and obsolete Chinese rhetorical form, the "eight-legged" (ba-gu, 八股) structure, which is essentially repetitious and parallel, thus may fit into the "spiralling" pattern Kaplan finds to be typical of Oriental writing.

Kaplan's hypothesis deserved and received applauds because it extended the language transfer theory to structures beyond the sentence level, where meaning of a discourse actually resides (Shaughnessy, 1978). We need to look beyond linguistics to rhetoric which covers a broader territory. Bander (1978) further emphasizes that awareness of the differences between different rhetorical patterns can accelerate the development of second language learners' writing proficiency in the target language.

Nevertheless, Kaplan's analysis is seriously mistaken. Matalene (1985) criticizes Kaplan's sample (writing of Chinese native speakers in an American university) as out of actual cultural context. Segmentation of texts to extract overall text structure, moreover, requires that criteria for segmentation are clear and explicit. Kaplan's conclusion cogently suggests how a rhetorical pattern can force the reader's interpretation of a written text into the desired frame; but Kaplan does not prove that the writers actually applied the pattern. We can systematize and replicate the process of uncovering discourse pattern only if we segment text according to structural principles.

Arrangement in Rhetoric and Discourse Education

In Classical Western rhetoric, an oration can have up to eight parts: (1) introduction, (2) narration (background knowledge), (3) thesis, (4) partition, (5) proof, (6) refutation, (7) digression, and (8) conclusion (Benson & Prosser, 1969). Kinneavy (1971) and Corbett (1971) agrees that the five parts (combining "thesis" with "proof" and leaving "partition" implicit) can be found (sometimes implicit) in the analysis of typical argumentative discourse.

Cicero (Benson & Prosser, 1969) contends that whether and where these parts--which carry out functions--occur depend on the role the speaker takes (e.g., as defendant or accuser), and the purpose of the discourse. Cicero thus relates invention inseparably to arrangement (both hinging on the purpose of the discourse).

Today's standard devision of writing (into four modes: narration, description, exposition, and argumentation) originate from Alexander Bain's five mode (the four plus persuation). Mode, classifying the whole piece of discourse, has replaced function, which classifies parts of a discourse.

As an indicator of the main function of a discourse, mode does affect writing: argumentative mode demands greater effort and time than narrative and descriptive modes do (Emig, 1977; Matsuhashi, 1981; Flower and Hayes, 1981), and, probably as a result, the better writters write, the greater the difference is in their writing across modes (Britton, 1975).

However, mode may be so general that it mislabels discourses.

For instance, narrative and descriptive modes can be loaded with values, e.g., be used to demonstrate certain opinions; and when they are, they can be considered suasive (Coe, 1981). Even when the writing task is assigned to be in a certain mode, moreover, very seldom will we find a discourse belonging to only one function, taking on only one "mode" (Britton, 1975).

Kinneavy (1971) reviews the history of the studies of discourse and observes that, "in discourse education, oral dialectical expressive media were exiled in the 1800's, rhetorical media in the 1900's"(p. 25). These "exiles", Kinneavy argues, are a result of the rise of the "scientific ethos" in education.

Johnson's report (1984) gives the reasons for Kinneavy's observation: moral teaching was dominant in the nineteenth century (thus dialectical expressive media was out); around 1910, literature replaced rhetoric in the public school curriculum when discourse education switched its aim to cultivate taste and eloquence, thus style, the essence of the "belle littres" trends, began to dominate the language art (thus went rhetorical media). The long dominance of style (even till now) helps explain how arrangement has long been neglected.

Kinneavy observes that in the 1960's, research in composition shifted its focus from product-oriented questions of style to process-oriented "discovery" (or invention, generation). In the trend of scientific ethos, discourse researchers turned to "objectively-defined" constituents to study discourse arrangement. Halliday and Hasan (1976) maintain that certain linguistic properties dubbed "cohesive ties" are one of the causes of a text of being.

Carrell (1982) interpretes those ties as indicators of coherence. Morgan and Sellner (1980) further point out that these ties are the consequence, not the cause of the text's being coherent. Carroll also cites several empirical studies (e.g., Steffensen, 1981) to conclude that cohesive ties do not independently enhance reading comprehension; other factors, like vocabulary difficulty and culturally appropriate schema, have greater impact on reading comprehension.

Winterowd (1972) finds that some writing which does not conform to the cohesive rules actually creates the intended effects on its reader. This presents a considerable challenge to the hypothesis that cohesion and unity separate competent from incompetent writing.

As a consequence of the reign of the scientific ethos and behaviorism, the research trend in both rhetoric and linguistics over the past two decades has been on objective, clearly-bounded elements. For this reason, modes and cohesive signals in rhetoric, together with sentence structure in linguistics, all emphasize form (what a text is labeled as) and neglect function (why a text is as it is).

The current research in rhetoric has started to be structure oriented, a remedy for the weaknesses of the previously dominant trend.

Arrangement (i.e., discourse structure, dispositio) is the second department of rhetoric. Despite the scarce attention arrangement has attracted from researchers, it is the department most directly associated with logic.

Although invention, arrangement, and style are traditionally

three distinct departments with distinct functions, they are closely interrelated aspects of the production and interpretation of a discourse.

Researchers interprete arrangement as either a dynamic process that has a direction, or a static set of consistent relationships. D'Angelo (1975) considers arrangement "closely related to the formal principle (or process) which produces discourse" (p. 56). Thus arrangement can be seen as tropes--"symbolic manifestations of underlying mental process" (p. 57).

Many researchers such as Larson (1977) and Bander (1978) point out that paragraph development is essentially linear and towards a certain goal. Larson explains further that unity and cohesion reinforce the development of the paragraph in a specific direction, thus helping writers exclude irrelevant information which sidetracks the reader from the goal.

This rationale, however, does not specify the ways to produce discourse that has unity and coherence. A Comparatively clearer guideline of "thesis and support" also fails to explain why a paragraph/discourse lacks depth. This failure, as Coe (1981) explains, occurs because thesis and support do not describe more than two levels of generality, while a paragraph considered well-structured usually has three or four levels of generality.

Richards (1936) and Burke (1968) both negates the traditional concept of arrangement as a static and passive thing that thought "puts on". Burke further details arrangement based on its functions: "(form is) an arousing and fulfillment of desires" (p. 183).

Winterowd (1975) on the other hand, defines discourse arrangement statically: "(form is) the internal set of consistent relationships perceived in any stretch of discourse" (p. 165). He starts with a set of seven relationships: coordinate, obversative, causative, conclusive, alternative, inclusive, and sequential. He later subsumes "sequential" under "coordinate". He also claims that these relationships are not merely for connecting constituents, they are also for generation. Unfortunately he never discusses generation in greater detail. Winterowd's set of relationships may be further condensed, for example, on the basis of Christensen's notion of level of generality.

Larson (1976) comments on Winterowd's definition of form as focusing more "on connections between sentences than on form in complete pieces of discourse" (p. 46). Richards (1936) contains that these connections between sentences are essential to both practical and theoretical understanding of the study of language.

Pitkin's "discourse block" model (1969) presents a hierarchy of functional relations within a discourse. He claims that blocks on the same level are logically connected in pairs (by one of four kinds of relationship--coordination, complementation, subordination, and superordination)--while the blocks across levels can be syntactically or logically connected, by what is essentially an embedding relationship: In the hierarchy, the blocks including more than one sentence/paragraph are near the top; the blocks including only part of a sentence are near the bottom. Each block can be subdivided into smaller blocs.

The problems with this model are, first, the Pitkin equates

predication with logical relationships. Second, he does not describe but only implies the semantic connections among the pairs. The co-occurrence rule in linguistics may explain some of the connections (e.g., between the subject and predicate , obligatorily coexisting in a sentence), but the rule does not specify the nature of connection.

All these discourse researchers discussed above aspire to discover a formal principle of discourse, or as D'Angelo (1975) puts it, to search for paradigms. But no one except Christensen (1965) systemizes the pattern to such an extent that the pattern becomes reproducible and generative. Coe et al (1987) dub all the research that examines patterns of modification and centers on relative level of generality "the Christensen tradition".

Christensen argues in his "A Generative Rhetoric of the Sentence" (1963) that a sentence is cumulated by the modifiers of the "base clause" through coordination or subordination, i.e., the base clause is the most general proposition, and comparisons and qualification are added to the base clause. In subsequent work, Christensen (1965) extends the same cumulative principle to the paragraph, which he defines as a "sequence of structurally related sentences".

Karrfalt (1966) suggests that there should be more than two ways to modify the "base clause", since generalizations (which are the neither subordinate to nor coordinate with the preceding information) can be inferred and developed.

Nold and Davis (1981) credit Karrfalt for his insight into Christensen's theory and suggest that "superordination" should be added to the directions of movement, along with coordination and

subordination. They devise a matrix based on these relationships.

Theories in the Christensen tradition reveal that the relationships substantiate structural rules (which may be generative); while the relationships may regulate structure by "direction". But in order to see the movement of relationships, one must apply an appropriate constituent unit because the relationships exist among the units.

D'Angelo (1974) considers sentence the constituent unit of discourse; Grady (1971), paragraph; Rodgers (1966), stadium--which is a series of sentences "containing a single topic, together with any accrete extentions or adjunctive support", i.e, a developed idea, which is worth accounting for. The boundaries of both the sentence, and the paragraph are contigent upon other elements: the sentence, on conjunctions and punctuation; the paragraph, on the physical presentation and the communicative context. A shorter unit, defined grammatically, would be superior.

The Grammar of Sentences and a Grammar of Passages

A system capable of describing the structural principles of discourse (movement and relationships) is desperately needed for various remedial purposes related to language and/or thought, such as remedial writing and psychotherapy.

In her eminent study of native language writers, Shaughnessy (1978) asserts that:

> The mature writer is recognized not so much by the quality of his individual sentences as by his ability to relate sentences in such a way as to create a flow

> of sentences, a pattern of thought that is produced, one suspects, according to the principles of yet another kind of grammar--a grammar, let us way, of passages. (p. 226)

In their analysis of oral discourse between psychotherapists and their patients, Labov and Fanshel (1977) also find that, in order to fully understand what an utterance can do, one must first know how one utterance is connected to another.

Although there has long been the need for such a grammar, related research seems to have missed the point. Labov and Fanshel's analysis of conversation started from analyzing paralinguistic features (e.g., intonation, pause) and failed because of the discrepancies in categorizing these cues and the ambiguity "which these signals show in isolation" (p. 29). Their second try was on cohesive signals (similar to what Halliday and Hasan analyze) and sentence parts before ending in a second failure for the same reason that obstructed their first try. Cohesive signals have to be examined in context in order to be understood precisely. Their third move was to speech act, which reveals how communicative rules relate to the linguistic code, or the code to reality (the effects), but not how one utterance links to another. The links that can be accounted for are the ones in pairs such as question and answer (Dore, 1977), which Pitkin (1969) would call a "complimentary relationship". As they investigate oral language, many contextual elements may confound the analysis. However, to supplement speech act theory with an analysis of

arrangement may very well improve the analysis of oral discourse.

There is an essential difference between the traditional grammar (of sentences) and a "grammar" of passages. Coe et al (1987) differentiate the two: the former can be independent from the semantic aspect of the sentence, but the latter cannot because it is designed to show the semantic deep structure of the discourse.

But the similarities between the two grammars are no less essential than the differences. The phrase "a grammar of passages" is not merely a metaphor, because the two grammars both delineate the relationships (predicative for grammar of sentences, logical for grammar of passages) among the constituents; in other words, they both extract modification patterns. In terms of delineating relationships, the distinction between the two grammars is that one kind of relationship is logical and the other is predicative.

Viewing grammar grom a different perspective, Saussure (1959) argues that "in a language state everything is based on relations" (p. 122), and Lockwood (1972) refers to grammar as a "network of relationships" (p. 26). Levy explains it further:

> (the identity of an individual linguistic element) was based on its participation in a CLOSED SYSTEM of elements, each of which was defined in relation to the other elements in the system (1979, p. 202).

Witte (1983) attempts to account for ccherence in discourse by tracking the development of the topics of sentences in a discourse. Compared with Halliday and Hasan's "cohesive ties"

(1975), these topics correlate much more closely with meaning. These topics, nevertheless, can not represent the propositions building up the meaning of the discourse, as Coe et al (198) argue.

Rumelhart's "story grammar" (1975) focuses on the macro level of discourse. He identifies "blocs" (chunks of incidents in a story) and implicitly assumes that these blocs are fixed structuring units of a story (see figure 2 for example). Thus he does take the initial step of arrangement analysis--trying to identify the constituents.

Figure 2

Structures in Rumelhart's "Story Grammar"

Story → Setting + Episode
Setting → (State)*
Episode → Event + Reaction
Event → (Episode | Change-of-state | Action | Event + Event)
Reaction → Internal Response + Overt Response
Internal Response → (Emotion | Desire)
Overt Response → (Action | (Attempt)*)
Attempt → Plan + Application
Application → (Preaction)* + Action + Consequence
Preaction → Subgoal + (Attempt)*
Consequence → (Reaction | Event)

Lockwood (1972) looks into a similar labeling system in stratificational grammar and concludes that these labels are merely to enhance readability because

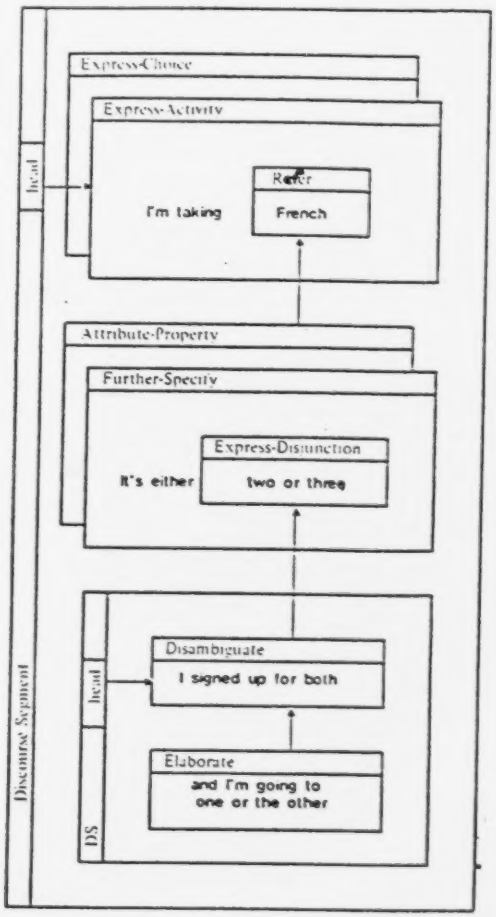
> When all necessary relationships are properly represented, the internal language will be resolved into these relationships, as only they have a status in the theory. (p. 26)

From a similar point of view, Levy criticizes all the labelling grammars (e.g., story grammar and text grammar) and

proposes that the "process", or the "flow of thought" is more essential to the structure of a discourse than the chunks of content. He devises a model based on the notion of "communicational goals". An example of such representation is in Figure 3.

Figure 3

Levy's "Communicative Goal" Model



(1979, p. 216)

The relationships connecting the propositions in a discourse is the most important point that Christensen captures while Levy misses in this model. The visual figure in Levy's

model implies only subordination. Even though Levy repeatedly emphasizes relationships in his discussion, he discovers no principle that governs the relationships.

Winterowd (1972) asserts that in order to understand form, it is necessary to inspect the various available surface structures which may realize the deep structure of an utterance. This point becomes salient when the deep structure of a discourse is realized in vastly different languages such as Chinese and English.

Hakuta (1977) among others, concludes that Chinese is a topic-centered language while English is a subject-centered language. The Chinese sentence is formed around the focus of the proposition, with the topic dangling outside the subject slot. For example,

Neike shu yezi da
that tree leaves big
"That tree (topic), the leaves (subject) are big." (p. 7)

Another explanation, based on transformational grammar and given by Tang (1974), is that Chinese is a "left-branching" (on the tree diagram) language, in which the modifier(s) of a noun phrase always precede the modified, as opposed to English (and most European languages), which is a "right-branching" language, in which the noun phrase usually precedes its modifier(s) when the modifier is long.

To translate between languages having different culturally typical rhetorical patterns is often difficult, partly because it is hard to re-present the same meaning and effect with appropriate syntactic structure. Kaplan (1968) comments on the writing of an Arabic-speaking ESL student: "while this

extensive parallel construction (which is characteristic in the Semitic language) is linguistically possible in Arabic, the English language lacks the necessary flexibility" (p. 9). Thus syntactic structure in part determines the modification pattern in a discourse.

Frames in Cognition, Socialization, and Communication

Form incites expectation, by arousing and fulfilling desires, according to Burke (1968); thus form regulates information generation and information processing. There are various types of form and their different orientations result in minor variation, but the two key concepts of these forms are "categorization" and "stereotype", either form is for unintentional perception (as schema [Rumelhart, 1980] emphasizes) or for conscious interpretation (as terministic screen [Burke, 1968] emphasizes).

Kepes (1965) concludes that categorization is the basis for human perception and consciousness:

> psychological events do not occur through the accumulation of individual elements of sensory perception, but through the coordinated functioning of clearly patterned networks of sensation determined by structural laws. (p. iv)

Kepe's conclusion parallels Vygotsky's (1962) argument that categorization which organizes items into patterns according to the relationships among the items, is the basis for concept formation.

According to Brown (1978), after the patterns are formed, they are modified by related experiences accumulated through

time; as a result, a stereotype is formed. When the stereotype is fulfilled, closure arises, shutting out extra information, or when the stereotype is not fulfilled, incoming information may be rejected. Misunderstandings often arise when information is forced into the moulding stereotype.

Researchers have theorized several "frames" based on the notions of categorization and stereotype. Kitsch's "formal frames" (1975) is a model representative of specific concepts. Morton's "logogen" (1980) which accounts for reading comprehension combines linguistic attributes (e.g., pronounciation of a word) with contextual or other kind of attributes. Goffman's "ritual constraints" (1980) embody stereotypes that exist in the setting. Fishman's "domain" (1971) delineates the setting's demand on language register, or even a particular language.

A frame along the same line, Rumelhart's schema theory (1980) stands out because it applies widely, its formation and functions are described in detail, and--the most important point for this study--the ways to modify schema are identified.

Schema, according to Rumelhart's explanation, are packages of knowledge representation governing--with defaults and constraints--the processing of information.

A schemata may evolve or be tuned in three different ways: substituting, relaxing, or tightening up the variable constraints.

Therefore, to overtly compare the discourse structures involved in second language learning, then to substitute target arrangement pattern for the stereotyped ones in the native language may efficiently accelerate the learner's mastery of the

target language.

Vygotsky's "zone of proximal development" (1962) validates the pedagogical inference of the schema theory. He contends that instruction should actively lead the student to the next accessible "zone of proximal development". Recognizing the higher zone, students structurally reorganize their cognitive strategies, and eventually acquire the "reflective awareness and deliberate control" which characterize higher cognitive functions, such as writing with clear, logical, and hierarchical connections.

Cognition, socialization, and communication influence perceptual and conceptual structures. Shaughnessy (1978), for example, concludes that ineffective writers do not conceptualize the movement (in writing) between the general and the specific ideas. She further comments that conceptualization is rooted in the cultural background because acquiring the command of a certain way of thinking is a process of socialization. Labov (1973) also concludes, in his analysis of American Black English: conceptualization involves cultural (in this case, subcultural) factors, consequently takes different forms in different cultures.

Bernstein (1971) and Piaget (1923, cited in Vygotsky, 1962) obtain consistent empirical findings about the interrelationships among language, thought, and socialization. Habermas' (1976) and Vygotsky's (1962) theories support such findings. Both Bernstein and Habermas attribute the interrelationships ultimately to the production system, a Marxist view. Piaget and Vygotsky focus on children's language development. Despite the different methods and foci, these four theorists and researchers

concur that, in studying language. the context of language performance should receive special consideration.

Piaget shows that the language development of children reflects socialization, a progression from an initial egocentric view towards a stage of objectification and logical thinking because, as Vygotsky also asserts, language is the social means of thought (1962, p. 51). Vygotsky draws from Piaget's findings and argues that the close relationship between language and thought is rooted in their development, which is a product of the development of human consciousness" (p. 119), opposed to Chomsky's language acquisition device (LAD) theory. LAD theory is shaken by some unusual cases in which language development has been impaired when linguistic communication either ceased at some point or was completely absent.

Vygotsky also identifies the structural nature of languge and thought: "thought of a higher level is governed by the relations of generality between concepts--a system of relations" (p. 51), This contention prefigures Shaughnessy's statement about the movement in competent writing between levels of generality, as his account of cognitive activity backs up Shaughnessy's other argument that writing *is conceptualization*:

> concept formation is a movement of thought within the pyramid of concepts, constantly altering between two directions, from particular to the general and vice versa. (p. 80)

Vygotsky also antipates the structure of Christensen's principles of discourse (1965) and the essence of Nold and Davis' matrix (1980):

> ... a concept can become subject to consciousness and deliberate control only when it is a part of a system. If consciousness means generalization, generalization in turn means the formation of a superordinate concept that includes the given concept as a particular case. A superordinate concept implies the existence of a series of subordinate concepts, and it also presupposes a hierarchy of concepts of different levels of generality. Thus the given concept is placed within a system of relationships of generality. (p. 92)

Vygotsky also maintains that when this system is established within a certain frame, this "system of meaning" can be transferred to a second language.

The connection between socialization and language manifest in a number of studies:

Bernstein reports that in oral language, children of lower socialeconomic status (SES) tend to use a "restricted code" characterized by lack of anaphoric nouns/pronouns and qualifiers; and children from higher SES tend to use an "elaborated code" characterized by more precise references and richer qualifiers. Bernstein attributes the characteristics of these two kinds of codes to the "basic categories of thought" derived particularly from relations of production.

Bernstein theorizes that holders of economic capital, who dominate the production system, are at the same time holders of cultural capital, with which they enshrine particular communicative conventions that gratify their needs in production and reinforce the existing production system.

This theory is elaborated by Coe's (in press) observations: the centralized power of decision making in the society dictates that

reports should be precise and generalized so they can be concentrated as they are forwarded level by level up to the final decision maker. Loban's(1976) and Ohmans'(1976) studies also evince the relations between writing and social relations. Luke at al's study(1983) suggests that the context of reading also determines meaning: "institutional context" of the school plays an important part in how the texts are to be interpreted.

Analyzing Chinese and English paragraph structure in my pilot study, I hypothesized that Chinese argumentation tends to be didactic because essay writing, as other liberal arts in Ancient China, is traditionally a means of moral education. The didactic function makes the writer repeat the thesis (which is an urge for a particular responses) with the aid of various comparisons (similes, metaphores, allegories) because the indirectness of comparisons lubricates the bluntness of teaching so that the audience is more likely to act according to the urging. Since the discourse is to dictate certain actions, ethical and logical appeals in Aristotle's sense are quite unnecessary in this context. This hypothesis accords with Matalene's conclusion(1985) that the function of Chinese rhetoric is mainly to "preserve the general harmony and to promote social cohesion" (p. 795).

Both Habermas (1976) and Levy (1979) recognize a place for a grammar of passages. One of the four presuppositions that Habermas claims to validate communication is that an utterance is deemed correct in the specific context, in order to satisfy certain "adequacy conditions" and bring up "intersubjective recognition" (p. 5). A grammar of passages varying from one

society to another is duely subsumed under the presupposition. The grammar of passages also fits well in Levy's claim that discourse is an intersection of four kinds of structures, one being the structure of the speech situation.

Thus, such a grammar not only can be inferred from but ractified by communication theories, though the rules of the grammar have not been systemized until the propositions of Coe et al.

Methodology

Pilot Study

To test the instrument and the analytical procedures, a pilot study was completed before the main research began. Using the discourse matrix originally developed by Nold and Davis (1980) and was still in the process of modification by Coe et al. (1987), the pilot examined paragraph structure in Chinese and English writing.

I sampled three groups (ten in each) of academic journal articles written on the philosophy traditional in the respective languages, in order to collect data representing Chinese and English writing conventions respectively. These articles were in Chinese by native speakers of Chinese on Chinese philophy, in English by native speakers of English on Western philosophy, and in English by native speakers of Chinese on Chinese philosophy. Three randomly selected, consecutive paragraphs of each article were first divided into T-units, then matrixed by the writer of this thesis alone.

Level of generality and node pair (for definitions, see p.

30) were the two dependent variable investigated.

The results showed that the Chinese paragraphs contained more T-units than those in the English native speaker group (the Chinese averaged 13.3 T-units; the English, 7.5), and 23% of the paragraphs in the Chinese native speaker group were longer than the longest paragraph in the English native speaker group. The Chinese paragraphs also had more levels of generality, more subtopics and stadia, and more node strings than the ones in the English native speaker group. The English paragraphs written by Chinese often comprimised between the two native speaker groups: in paragraph length, number of levels of generality, and number of node strings.

The highest level of generality occurred in different locations in the Chinese and English paragraphs. In the English native speaker group, the highest level was reached at the begining (as a topic sentence) and/or the end (as a conclusion) while in the Chinese native speaker group it was near the millle or the end of a paragraph (as a topic sentence).

There were several problems in the pilot: (1) Academic writing did not seem justifiable to represent writing in general. (2) Three paragraphs did not seem representative of discourse structure. (3) T-unit was not fine enough for comparing drastically different languages. (4) Node pair was inferior to idea string (which node pair later evolved into) in accounting for developed ideas. (5) The two dependent variables did not cover detailed discourse structures. (6) The analysis could be biased since the matrixing was conducted by the experimenter alone. All these problems were resolved in the present study.

In the present study, I selected newspaper editorials because they are highly accessible, and authentic--they employ highly acceptable mode of communication in the society.

I found that newspaper editorials published in the People's Republic of China were very different in deea arrangement and even in syntactic structure from those published in the Republic of China. The editorials turned out to suggest that discourse community (e.g., communist or capitalist), along with language, might have some bearings on discourse structure.

Statistical analyses were employed in this study, and in most cases, random samples statistically have the best chance in reflecting the true universe. However, I selected newspaper editorials not to represent editorial writing, but to represent the kind of argumentative arrangement required for successful communication in the society (hence in post-secondary education) which consumes the edirorials. So I selected the most authentic newspapers and/or the ones with the greatest circulation. However, the purpose of independent sampling (one of the assumptions of statistic analyses) was achieved because the purpose is to ensure that the data truly represent the universe.

In the data, there are four cells divided by two independent variables, language and political stance, with two newspapers in each cell. Forty editorials were chosen from eight daily newspapers (five from each), published between September 1, 1982 and May 30, 1983, on domestic economy. See figure 4.

Figure 4

The Data Cells

	Chinese	English
Communist	Ren-Min	Canadian Tribune
	Guang-Ming	Guardian (New York)
Capitalist	Lien-Heh	Globe & Mail
	Chung-Yang	The New York Times

Variables

Besides the two independent variables, there are two groups of dependent variables--three at macro level and four at micro level level. See Table 1.

Table 1

Full Names of the seven Dependent Variables

the macro level

Short Form	Full Name
Rgen	ratio of level of generality over Clause
Rns	ratio of node string over Clause
Ris	ratio of idea string over Clause

the micro level

Short Form	Full Name
AsubtopN	average subtopics in node string
AsubclaN	average subordinate clauses in node string
AgenI	average levels of generality in idea string
AclaI	average subordinate clauses in idea string

Clause and paragraph respectively account for the length of text and text division. Level of generality accounts for the range of discourse development. Sum of node strings accounts for the coordination pattern at the macro level. Sum of idea strings accounts for the development of ideas. (See Appendix for an example.)

For the macro level variables, the influence of the length of discourse is cancelled out, by dividing levels of generality, sum of node strings, and sum of idea strings respectively by sum of clauses. For example (see Appendix), the Rgen of a Ren-Ming editorial (Mar. 23, 1983) is--levels of generality (9 in this case) over sum of clauses (66 in this case)--0.136. The Rns of the same editorial is--number of node strings (15 in this case) over sum of clauses--0.227. The Ris of the same editorial is--sum of idea strings (28 in this case) over sum of clauses--0.424.

For the micro level variables, the patterns within node string and sum of idea strings are accounted for. AsubtopN accounts for the coordination pattern within node string, obtained from dividing sum of subtopics in all the node strings by sum of node strings, in this example, it is 38/15=2.533.

AsubclaN accounts for the degree of elaboration within node string, obtained from dividing sum of subordinate clauses under all the subtopics by sum of node strings. In this example, it is 42/15=2.80.

AgenI accounts for the range of a developed idea, obtained from dividing the total levels of generality of all the idea strings by sum of idea strings. In this example, it is 74/28=2.643.

AclaI accounts for the degree of elaboration of a completely developed idea, obtained from dividing sum of clauses in all the idea strings by the total sum of idea strings. In this example, it is 99/28=3.536.

Analytical Unit

The most appropriate analytical unit for this study should be able to isolate propositions based on an objective boundary-setting rule, ambiguity-free, and consistent across Chinese and English. T-unit, the minimal terminable unit, is a linguistic structure developed by Hunt(1965) that contains a main clause plus all the subordinative clauses and/or phrases. But T-unit is intrinsically flawed and too crude for detecting discourse structures between Chinese and English.

The clause is a natural and universal linguistic unit. Lü(1954) concludes that the clause is better for analyzing Chinese than is the sentense (which he assumes to present a complete idea, similar to the notion of Hunt's T-unit). The clause, moreover, has the tightest boundaries (compared to those of sentence and T-unit) for isolating propositions.

"Clause" is defined here as a grammatical unit containing all the components of a complete logical proposition: in semantics, an understood topic slot plus a comment slot; in syntax, the subject (possibly ellipted) slot and the obligatory finite predicate slot, as well as any optional phrasal modifiers. However, units beginning with a relative pronoun and containing all the above components were taken as seperate clauses only when appositive (e.g., clause 2 in the

following example b). Infinitivals (e.g., "To err" in "To err is human"), which sometimes are taken as clauses with omitted subjects, are here taken as phrases.

The following two examples show how I counted clauses. I use slashes ("/") here to isolate clauses.

a. He said that he was mad. (one clause)

b. /(1) How to extend the application of the "JPC" system, /(2) which is usually referred to as the "Big Contract", from farm land to prairies and mountains, /(1) thereby bringing further prosperity to the economy of villages is a problem to be solved (2 clauses) Ren-Ming

I recongnized that some linguists, such as Ellegard (1978) and Quirk et al. (1972), would contend that this definition is too crude. But the clause isolates propositions better than any other units, thus is the best choice possible so far.

Instrument

Based on the n .tion of level of generality originated by Christensen (1963 &1965), Nold and Davis(1980) devise a three-dimensional, "psychologically accurate and pedagogically useful representation of the sturcture of text" (p.141). Their matrix also makes visible a variant of Rodger's "stadium" (1966 &1970)-with the variable Node String-and the "Macrotext" of a discourse discussed by Kintch and Vipond (1975).

Coe et al, (1987) modify the matrix into two-dimensional that is still systematic enough to make the analysis replicable yet elegant enough to alleviate much drudgery in coding and drawing.

The two major tasks of matrixing are to locate the propositions in the discourse on the relative levels of generality and

to show the connections among the propositions. Usually the connections are between two consecutive propositions, but connections between nonsequential propositions are common. They often occur when one proposition is supported by more than one other proposition. Each supporting point is then connected directly to the supported proposition.

Each proposition is represented by a circle with a number in it. The number indicates sequence. The relations among the clauses are represented by lines. Very often there are more than two lines attached to the circles, because of the far-reaching relationships or the ambiguity of the text. Or there could be no line attached to some circles if they are not semantically related to the discourse. The beginning of a paragraph is shown by a paragraph sign, ¶.

The T-units immediately under the highest superordination on the matrix can be taken as the gist of discourse; they are the subtopics, or the "macrotext" discussed by Kintsch and Vipond(1975).

The term "node pair" is a product of text-based interpretation in which lines connect only consecutive propositions thus suggesting linear process. A node pair is formed by any two propositions at the same level of generality without any superordinaton between them. A node string, on the other hand, is formed by coordinated propositions. The connections (indicated by lines) do not necessarily involve the order in which propositions are presented in the discourse, as the original matrix does. The modified matrix reveals a reader-based, psycholinguistic account of meaning (hierarchical structure).

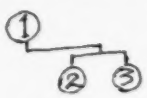
Coe et al. (1987) clarify the distinctions between abstraction and generality. According to Berthoff (1984), the main distinction between abstraction and generality is that generality

proceeds in inducing similarity from various objects or events that share something in common, e.g., "flower" is generalized from roses, lilies, etc. Abstraction, by contrast, can move from a single object or event to a concept that object/event embodies, e.g., greenness abstracted from a concrete, sensible green object. Co et al. explain that both abstraction and generalization are essential to concept formation.

Generalization "is what rhetoric chiefly describes" (Berthoff, 1980: 196) because level of generality explains coherence of text. The present study turns on Christensen's notion of level of generality. Nold and Davis assert that three relationships can connect related propositions in a discourse: coordination, subordination, and superordination.

Coordination describes two clauses at the same level:

> (1) One school of thought . . . maintains that current slump is deeper and will last longer than many people think (2) simply because it constitutes not meerely a correction in the traditional economic cycle, (3) but rather is a precursor of a radical restructuring of the global economy. (Globe & Mail, Oct. 5, 1982)

clauses 2 and 3 are equally general (in this case, they parallel each other). They will be drawn as 

Subordination describes two clauses when the second is more specific than the first, therefore on a relatively lower level and logically subordinate:

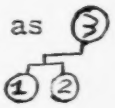
> (1) As for the so-called jobs program, it is an expensive fake, (2) the government does nothing but wait for the magic of monopoly capitalism to unfold

in its own way. (Canadian Tribune, Nov. 8, '82)

They will be drawn as

Superordination describes two clauses when the second is more general than the first, therefore on a relatively higher level, and is logically superordinate:

> (1) If our government had neither undertaken the Ten Constructions, (2) nor started the Twelve Constructional Investment Plan, (3) we could not have kept the economic growth of this region at the current level. (Chung-Yang, Jan. 20, '83)

Clause 3 is superordinate to clauses 1 and 2, both of which are conditions for the statement in clause 3. They will be drawn as 

Nold and Davis also subcategorize the exact functions of these three relationships. Their subcategorization contains some problems, which, however, are solved by Coe et al.

Procedures

The coding procedures were as follows:

First I segmented each editorial into sequenced "clauses" as defined.

Second I translated all twenty Chinese editorials into English, under the supervision of the chairperson of Chines courses at Simon Fraser University. Original segmentation was retained even when the English translation did not retain the original syntactic structure.

Third, a native speaker of English and a native speaker of

Chinese did the matrixing independently.

Fourth, the two coders discussed all disagreements between their two sets of matrices. All unresolved disagreements were forwarded to a third person, who modified the matrix into its present stage.

Fifth, I counted or calculated each of the twelve variables.

Sixth, I ran statistical analyses to discover if the three independent variables significantly influenced the dependent variables.

The inter-coder agreement was 71.4, just a littl lower than the usually accepted rate, 75%. Considering that this analysis has to be subjective and the two coders had to interprete the intrinsically ambiguous texts, the application of this matrix is reasonably reliable.

Statistical Analyses

I ran three sets of statistical analyses (t-tests, two-way multivariate analyses and correlation tests) on the forty newspaper editorials at 0.05 level of significance.

I first performed two t-tests to see whether the dependent variables were homogeneous in each main cell. If they were, the two subcells would be legitimately combined so that the results could be stronger. See Tables 2 and 5 for results.

Secondl I ran two multivariate analyees to examine whether language and political stance significantly influenced the two groups of dependent variables. See Tables 3, 6, 7, and 8 for results.

At last, I conducted correlation tests to see how those seven

dependent variables relate to each other. See Tables 4 and 9 for results.

Table 2

t-test Results on the macro level Variables

		paper	mean	SD	F ratio	T value	p
(Rgen)	Chinese Com.	1	0.100	0.042	1.31	-2.56	0.034
		2	0.173	0.048			
	Chinese Cap.	1	0.099	0.018	2.46	-3.61	0.009
		2	0.153	0.029			
	English Com.	1	0.205	0.073	2.17	0.92	0.390*
		2	0.151	0.108			
	English Cap.	1	0.160	0.044	5.02	-0.55	0.602*
		2	0.172	0.020			
(Rns)	Chinese Com.	1	0.234	0.022	5.42	-0.22	0.838*
		2	0.240	0.052			
	Chinese Cap.	1	0.216	0.020	2.71	-1.18	0.280*
		2	0.237	0.033			
	English Com.	1	0.198	0.037	1.26	0.06	0.953*
		2	0.197	0.042			
	English Cap.	1	0.193	0.051	1.08	-0.56	0.590*
		2	0.211	0.049			
(Ris)	Chinese Com.	1	0.331	0.062	1.22	-0.29	0.779*
		2	0.343	0.069			
	Chinese Cap.	1	0.398	0.463	1.75	-1.72	0.126*
		2	0.463	0.067			
	English Com.	1	0.410	0.077	2.86	-2.77	0.030
		2	0.597	0.130			
	English Cap.	1	0.447	0.034	3.98	0.15	0.884
		2	0.442	0.068			

*p>0.05

Table 3
The Results of the Two-way Multivariate Analysis on Rns

source variance	sum of squares	degree of freedom	mean square	F ratio	p
language	0.010	2	0.010	6.976	0.012*
political stance	0.000	1	0.000	0.065	0.800
interaction	0.001	1	0.001	0.360	0.552
explained	0.011	3	0.004	2.467	0.078
residual	0.053	36	0.001		
total	0,064	39	0.002		

*p<0.05

Table 4

Correlation among the macro level variables

	Rns	Ris
Rgen	-0.103 p=0.264	0.089 p=0.293
Rns		-0.143 p=0.190

cases=40

Table 5

t-test Results of the micro level Variables

	paper	mean	SD	F ratio	T value	p
(AsubtopN)						
Chinese Com.	1	2.692	0.361	1.59	0.17	0.870*
	2	2.648	0.455			
Chinese Cap.	1	2.520	2.364	1.58	1.62	0.146*
	2	2.364	0.134			
English Com.	1	2.696	0.186	2.68	2.07	0.079*
	2	2.366	0.304			
English Cap.	1	2.260	0.209	1.53	-1.11	0.300*
	2	2.394	0.169			
(AsubclaN)						
Chinese Com.	1	2.498	0.387	5.36	1.24	0.265*
	2	1.956	0.896			
Chinese Cap.	1	2.430	1.105	1.97	-2,19	0.063*
	2	4.298	1.552			
English Com.	1	2.526	1.560	12.24	0.80	0.463*
	2	1.946	0.446			
English Cap.	1	3.002	0.420	4.28	1.40	0.212*
	2	2.396	0.869			
(AgenI)						
Chinese Com.	1	3.164	0.471	1.72	1.92	0.094*
	2	2.656	0.358			
Chinese Cap.	1	3.022	0.271	2.71	-1.65	0.152*
	2	3.022	0.271			

English Com.	1	2.752	0.218	1.05	0.63	0.546*
	2	2.664	0.224			
English Cap.	1	2.860	0.163	6.13	-1.63	0.162*
	2	3.176	0.403			

(AclaI)

Chinese Com.	1	4.702	0.718	3.53	0.63	0.549*
	2	4.267	1.350			
Chinese Cap.	1	3.930	0.316	1.75	0.29	0.781*
	2	3.856	0.478			
English Com.	1	3.312	0.393	2.83	1.39	0.210*
	2	3.028	0.234			
English Cap.	1	2.950	0.257	6.75	-2.35	0.064*
	2	3.702	0.668			

*p>0.05

Table 6

The Influence of Language on the Average Values

variable	error SS	error MS	F	p
AsubtopN	2.653	0.074	1.890	0.178
AsubclaN	43.806	1.217	0.884	0.353
AgenI	5.076	0.141	2.336	0.135
AclaI	15.366	0.427	22.135	0.000*

*p<0.05

Table 7

The Influence of Political Stance on the Average Values

variable	errorSS	errorMS	F	p
AsubtopN	2.653	0.074	6.870	0.013*
AsubclaN	43.806	1.217	5.944	0.028*
AgenI	5.076	0.141	5.944	0.020*
AclaI	15.366	0.427	0.819	0.371

*p<0.05

Table 8

The Interaction between Language and Political Stance

variable	error SS	error MS	F	p
AsubtopN	2.653	0.074	0.001	
0.972				
AsubclaN	43.806	1.217	0.933	
0.340				
AgenI	5.076	0.141	0.001	
0.977				
AclaI	15.366	0.427	2.756	
0.106				

Table 9
Correlations among the Four Average Values

	AsubclaN	AgenI	AclaI
AsubtopN	0.028 p=0.431	-0.100 p=0.269	0.540 p=0.000*
AsubclaN		0.642 p=0.000*	0.183 p=0.129
AgenI			0.472 p=0.001*

*p<0.05

At the macro level, the t-tests showed that neither Rgen nor Ris was homogeous in each main cell, but Rns was (see Table 2), thus I performed a multivariate analysis on Rns only. The analysis showed that the Chinese had more macro-level coordinative structures (indicated by Rns) than the English (p=0.012) while political Stance did not significantly influence Rns (p=0.800). See Table 3.

At the micro level, the t-test showed at all the four variables are homogeneous in each main cell (see Table 5), thus I performed a multivariate analysis on the four variables. The statistical results showed that the Chinese had more elaborating details in a completely developed idea (indicated by AclaI) than the English (p=0.000) (see Table 5). The communist had more coordinate subtopics under a generalization (indicated by AsubtopN) than the capitalist (p=0.013). The capitalist had more elaborating details under a generalization (indicated by AsubclaN) than the communist (p=0.028). Also, the captalist had greater range in developing an idea (indicated by AgenI) than the communist (p=0.020) (see Table 7). There were no interactions

between Language and Political Stance (all seven p values were greater than 0.05) (see Table 8).

At the macro level, I found no correlation among the three variables--Rgen, Rns, and Ris. All three p values were greater than 0.05 (see Table 4).

At the micro level there were several correlations found. The numb r of coordinate subtopics (AsubtopN) correlated with the elborating details of idea development (AclaI), p=0.000. The elborating details under a generalization (AsubclaN) correlated with the range of idea development (AgenI), p=0.000. The range of idea development (AgenI) correlated with the elborating details in idea development (AclaI), p=0.001.

Language significantly influenced (1) the number of macro-level coordinative structures (node strings), and (2) the number of clauses within idea string. The Chinese editorials had significantly more node strings than did the English ones; and the Chinese editorials also had significantly more clauses within an idea string than did the English ones.

These results indicate that the Chinese ditorials used more coordinative structures at the macro level and used more clauses to develop an idea at the micro level, although this elaboration in the Chinese did not involve significantly more levels of generality. Examining these two findings, we may say that the Chinese used more clauses in developing coordinate subtopics, rather than in developing subordinate details under a generalization. This tendency evinces the emphasis of parallelism, or Kaplan's contention (1967 & 1968) of "spiral" development in Oriental writing.

Political stance significantly influence three of the four micro-level variables that weave up the texture of a discourse: the subtopics and the subordinate clauses in node strings, and the range of idea string development. The communist editorials had more parallel subtopics under a generalization and took more clauses to elaborate subtopics than did the capitalist editorials.

Within node strings, the communist editorials contained more AsubtopN, i.e., the communist had more coordinative subtopics per node string than the capitalist. However, the capitalist editorials contained more AsubclaN--which reveals the elaborating details per node string--than the communist. In short, the communist edirorials spent more clauses in developing coordinate subtopics under a generalization and the capitalist in elaborating details.

Within idea string, the capitalist editorials contained greater range of idea string development (AgenI) than the communist.

The communist editorials had a characteristic of using more clauses in developing coordinate ideas under a generalization, consequently node strings were developed more by coordination than in the capitalist editorials.

Although not proven by statistical analysis, the elaboration of the subtopics seems to result from reiteration of propositions for the purpose of emphasis. This repetition often occurred when the writers urged the reader to respond by taking a certain a attitude and/or action.

The two way multivariate analysis (note that at macro level the analysis was on Rns only) showed that there was no

significant interaction between the two independent variables, Since the influences of the two variables were so clear-cut, it is appropriate to conclude that language had its effect on both the macro-level and micro level structures; and political stance, stance, more on the micro level structures.

Discussion and Conclusion

I would propose that the matrix is useful for both research (e.g., this study itself) and pedagogy (e.g., teaching basic writers, [Fahey, 1986]or advanced writers [Coe et al, 1987]) in both reading and writing to "see" how ideas are connected in a discourse and to quantify the characteristics of the structure.

I conclude, from the uses of the matrix, that the matrix can be used to extract a "grammar of passages" since it can show the typical patterns required in specific kinds of writing and help produce these patterns by leading writers to fill in the slots of the appropriate pattern.

However, I propose such pedagogy, not to replace a certain chaos in present writing pedagogy with bare structure, but to, primarily, make students and (especially) teachers aware of the functions of discourse structure and to develop the student's meta-knowledge of form and context so that they may then recognize and control various forms, as well as better understand the nature of writing, including the cognitive and communicative aspects involved.

Further research may start from the limitations of the present study by (1) expanding data sources and sample size, and (2) encompassing more varieties of writing with different

functions, rhetorical contexts, and languages, then further (3) exploring the relationships between arrangement and style, (4) comparing the characteristics of written and spoken discourse, (5) applying the matrix in pedagogy of both reading and writing, and (6) investigating the relationships between language, thought, and the environment, drawing theories from, for example, communication and cognition.

Note, however, the clause may be too fine for pedagogy. The sentence (or T-unit) may be more appropriate for teaching. Besides, in the data I found that Chinese newspaper editorials tended to didactically advocate government policies; The English ones, by contrast, tended to criticize government policies. The polarized roles of advocator and accuser may have affected the statistical results.

SL has now evolved far from mechanical drilling of sentences like " This is a book." Cross disciplinary implications (e.g., with psychology) may at first sight seem quite distant from second second language research. In the present study, the methodoloby, combined with supporting theories, offers a new perspective to frames (discourse structure in particular). We have been through a long and necessary way to become practical from being theoretical.

Appendix

Extend the implementation of the 'Joint Production Contract' System

Mar. 23, 1983. Ren-Ming

1 How to extend the implementation of the "Joint Production Contract" system (2 which is usually referred to as the "Big Contract",) from farmland to prairies, mountains, and waterbands, etc., and to make the agricultural economy more prosperous is an issue awaites scrupulous research.

3 The JPC system is a great creation of the Chinese farmers. 4 It has shattered down the barriers of "leftism", (5) opened a new way for agricultural advancement. 6 However, the develcpment has not been well-balanced. 7 One of the signs of the imbalance is its rapid development in agriculture alone, (mainly in growing grain, cotton, and oil-producing plants) and 8 the results were eminent. 9 However, as a ccmparison, it has not gone very far in stcck-raising, forestry, nor fishery: 10 in some of these areas, it has not even been implimented yet. 11 This situation is a disadvantage to the full-scaled develcpment of cur rural areas. 12 The JPC system has been assessed to be suitable only for the impoverished areas; (13) unsuitable for prosperous areas. 14 This judgement has now been corrected by facts. 15 Is this system applicable to areas other than agriculture - e.g., stock-raising, forestry, cr fishery? 16 Actually, this question has generally been answered by the

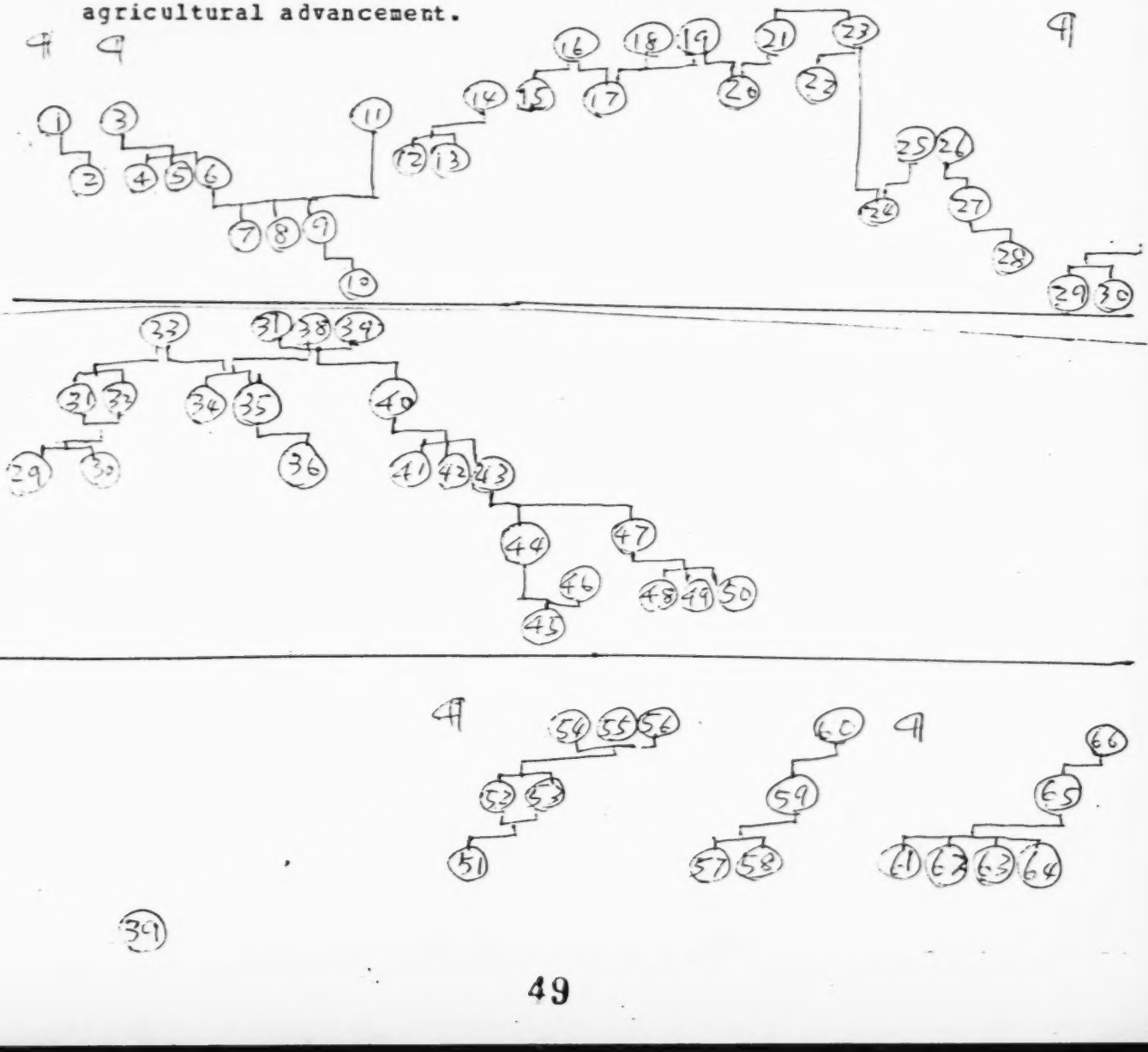
practical experiences of our people. 17 Within the last few years, there have been some break-throughs made by various workers in forestry, stock-raising, and fishery. (18) . . . implemented the JPC system, 19 and , in general, the results were positive. 20 It was almost that (whenever they) applied it to, 21 there were changes taking place. (22) (and whatever) enterprises it was implemented in, 23 there was prosperity. 24 In Gan-de county, Ching-Hai, which is profiled in one of the feature stories in today's paper, after the fifty-three stock-raising teams there had applied the JPC system for only a year, 25 the harvest increased greatly. 26 The report also concludes that there are six major advantages to the JPC system. 27 The advantages are more obvious in the enterprises of exploratory nature, 28 e.g., exploring the utilization of mountains, rivers, and waterbands.

29 Consider the vast population, China does not have plenty of farmland. 30 yet our prairies, mountains, rivers, and waterbands are vast. 31 If we concentrate on the utilization of the farmland only, 32 rather then trying to fully develop other natural resources, 33 it would be impossible to have further break-throughs in our agriculture. 34 Now that the ice of the "leftism" has been broken, 35 (and) our people pressingly demand a relaxation of the policy, 36 (so they can) apply the JPC system to develop these natural resources. 37 We should meet the demands of our people, (38) conform with and take advantage of the great trend, (39) organize and guide our people on to the broad way of the richness of the labor force. 40 Forestry,

stock-raising, and fishery are in the same boat. 41 They should should start from overcoming the practical problems, (42) hold on to the principles of the JPC system, (43) and apply them in various, flexible ways. 44 For instance, the policy should be relaxed in those contracts on exploration, 45 Mountain exploration should be granted a decade or so on the contract, 46 thereby the profits of the pioneers can be better-secured. 47 For those enterprises run collectively and resulted in dissatisfaction, if our people request to take them over through the JPC system, it should be done as requested. 48 If teams work better, we will take teams, 49 if families are the appropriate working unit, we will take families. 50 (Besides,) the "Management Contract" system can also be considered.

51 When JPC system is extended to forestry, stock-raising, fishery, etc., (52) (it) will bring greater prosperity to the rural economy. (53) Of course, (it) will also cause new problems. 54 We must not overreact on anything new based on our leftist prejudice, (55) (nor) rush into any "correction". 56 To equip curselves with the analytical attitude is what we should do, other than examining and investigating the problems extensively. 57 Our rural production level is still low, 58 and our commodity production is still under development, (59) (so we) should allow certain extent of circulation and various combinations of of the funds, skills, and labor, 60 ~~(because)~~ they are helpful to the develcpment of the rural economy.

61 This year, in the vast rural areas already adopted the system, we should emphasize the stability of production, (62) perfect the 'Joint Production Contract' system on the premise of maintaining stability in large, (63) allow the farmers enhance their productivity more devctedly and confidently. 64 In those areas that have not adopted the JPC system,we should give them the chance to try. 65 If we can take good care of these two aspects, (66) (we) will bring even stronger stimulation to agricultural advancement.



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